

INEEL

Inside

An inside look at the Idaho National Engineering and Environmental Laboratory



INEEL's Super Hard Steel coating one of this year's top 100 technological achievements

One of the hardest metallic materials known, INEEL's Super Hard Steel, has been recognized as one of this year's 100 most significant technological achievements by *R&D Magazine*.

Super Hard Steel can be sprayed onto a wide variety of metal surfaces, and it surpasses existing high-performance commercial coatings in wear, corrosion and impact resistance.

Researchers create the Super Hard Steel coating by transforming steel alloy into a metallic glass. Metallic glass has essentially no flaws, making it both hard and tough—perfect for use as a coating.

Once sprayed on, the Super Hard Steel coating cannot be removed—even with a hammer and chisel. The extreme hardness of Super Hard Steel gives the material abrasion resistance properties that researcher Daniel Branagan believes will significantly improve the lifetime of coated machine parts.

"Industry just didn't believe our data at first," he said. Citing one instance, a skeptical company president handed a coated sample to a technician for testing while Branagan was giving his presentation. "I was a little nervous," Branagan said, "but I just kept going with my presentation." Not long after, the

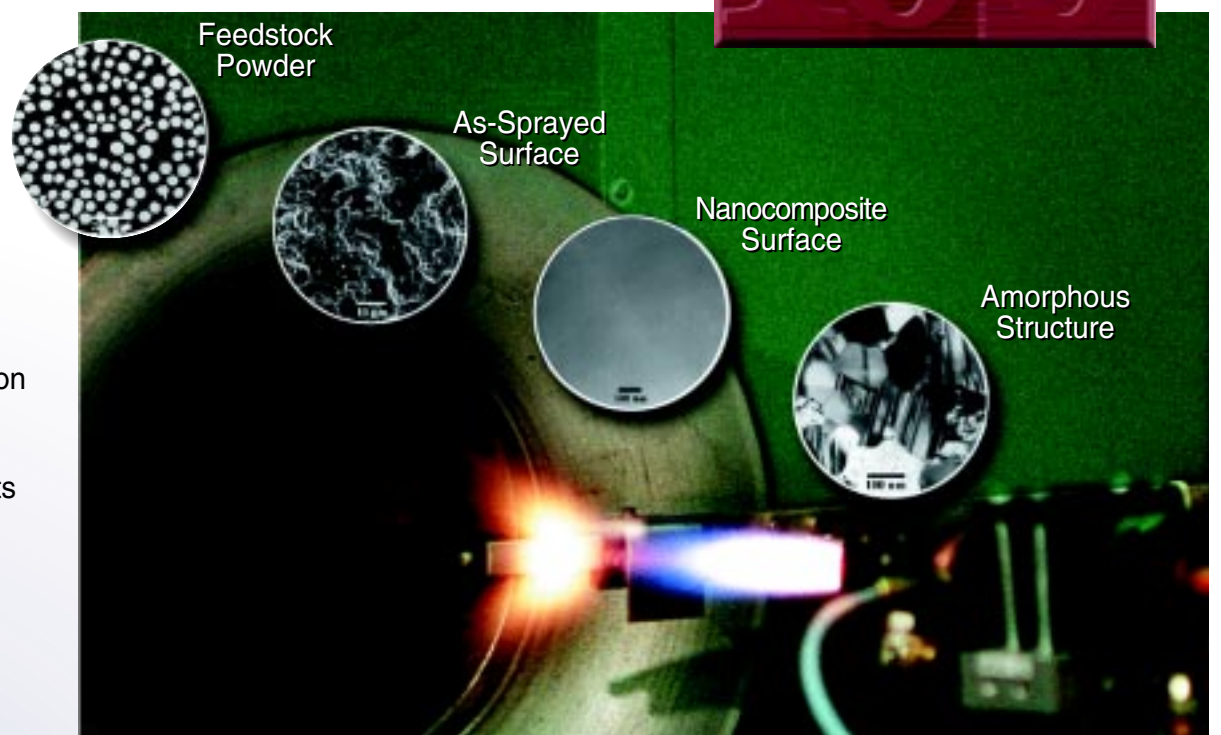
technician returned and reported that the sample had survived the testing completely unscathed. "The room went silent," he said. "Then I really had their attention."

Branagan feels that this technology has tremendous potential to impact the manufacturing industry. A coating like this can be used almost anywhere because all areas of industry experience wear and corrosion problems. The steel product is less expensive than currently available high-performance coatings. Branagan feels that the biggest cost savings, however, will occur over the lifetime of a coated part since the machine will simply last much longer, and require significantly less maintenance.

Over the next year, Branagan will work with a range of industrial partners to prove the effectiveness of his coating, conducting extensive abrasion, corrosion and fatigue testing. More than 20 companies are reviewing Super Hard Steel for licensing or testing on products ranging from self-sharpening knives to mining rock crushers. Additionally, the technology will soon be applied to key military devices, pitting the coating against the most challenging uses and environments possible.

This is the 27th R&D 100 award won by INEEL researchers. The research team includes INEEL materials scientists Branagan, Elizabeth Taylor and Joseph Burch, and thermal spray researchers James Fincke, David Swank and DeLon C. Haggard. Also included is former INEEL laboratory director Bart Krawetz.

(For more information, call Deborah Hill at 208-526-4723.)



INEEL tests and uses Russian cleanup technology

Onlookers watch the Russian-made detectors mounted on an INEEL robot during a mock demonstration of work that was conducted in contaminated areas.

Technologies that matured in the aftermath of the Chernobyl nuclear accident in Russia were demonstrated recently in Idaho with support from the Deactivation and Decommissioning Focus Area. The result of the demonstration is an improved capability for workers to decontaminate facilities at the Idaho National Engineering and Environmental Laboratory and across the Department of Energy complex.

The principal technology—the Gamma Locator Device—was originally designed by NIKIMT, Russia's Research and Development Institute of Construction Technology, and was used during cleanup of the Chernobyl nuclear reactor. The distinguishing feature of this device is that it remotely transmits live video and radiation measurements via radio frequency to operators at control stations a safe distance away. The different levels of radioactivity appear on a computer

monitor as color-coded maps that allow technicians to pinpoint highly contaminated areas.

A Russian-developed Isotopic Identification Device is built into the Gamma Locator Device to quickly identify the isotopes present. The identification device can be set up to identify a wide range of isotopes.

Combined, these technologies remotely identify radioactive isotopes and measure their radiation fields.

To demonstrate the value of this technology, these Russian-made instruments were mounted on an INEEL robot that transported them into contaminated rooms at a facility within the INEEL's Test Area North. The purpose of this exercise was to evaluate the accuracy and effectiveness of the technologies in a mild radiological environment.

See Cleanup Technology, page 4

Bill Shipp: INEEL's new leader

Focused on 'putting science to work'

Bill Shipp, principal vice president in Bechtel and an internationally recognized leader in applied science and technology and environmental systems, was named INEEL President and General Manager Aug. 1. Shipp will retain his position of INEEL Laboratory Director as well, overseeing research and development activities.

Shipp succeeds Bernie Meyers, who returned to Bechtel corporate to assume key responsibilities with the world's largest engineering and construction management firm.

Shipp holds a doctorate in radiological physics from Purdue University. He has led the research, development and commercialization of a range of environmental remediation and nuclear science technologies.

In 1999, Idaho Gov. Dirk Kempthorne named Shipp as his Idaho Science and Technology Adviser. He is the first person in Idaho history to hold this position, and will continue in that capacity while leading the INEEL.

Shipp is quick to share his vision for building a sustainable and widely recognized laboratory that will continue to serve the nation for decades to come.

"We're proud to support all four missions of the Department of Energy — environmental quality, science, energy security and national security," Shipp says. "To succeed, the INEEL will be the best at managing the interface



Dr. Bill Shipp

between science and engineering, and at putting science to work."

INEEL already has the lead in two important national DOE initiatives, both of which will require the integration of science and

engineering in a wide collaboration among DOE laboratories. One is environmental management — addressing the legacy issues of America's successful Cold War effort.

"This is our number one priority," he stresses.

The second is nuclear energy.

"A new generation of nuclear reactors is necessary to maintain America's energy security," Shipp says.

See Shipp, page 3

INEEL receives highest safety award

The Idaho National Engineering and Environmental Laboratory has been recognized as the first national laboratory to receive Gold Star status under the U.S. Department of Energy's Voluntary Protection Program.

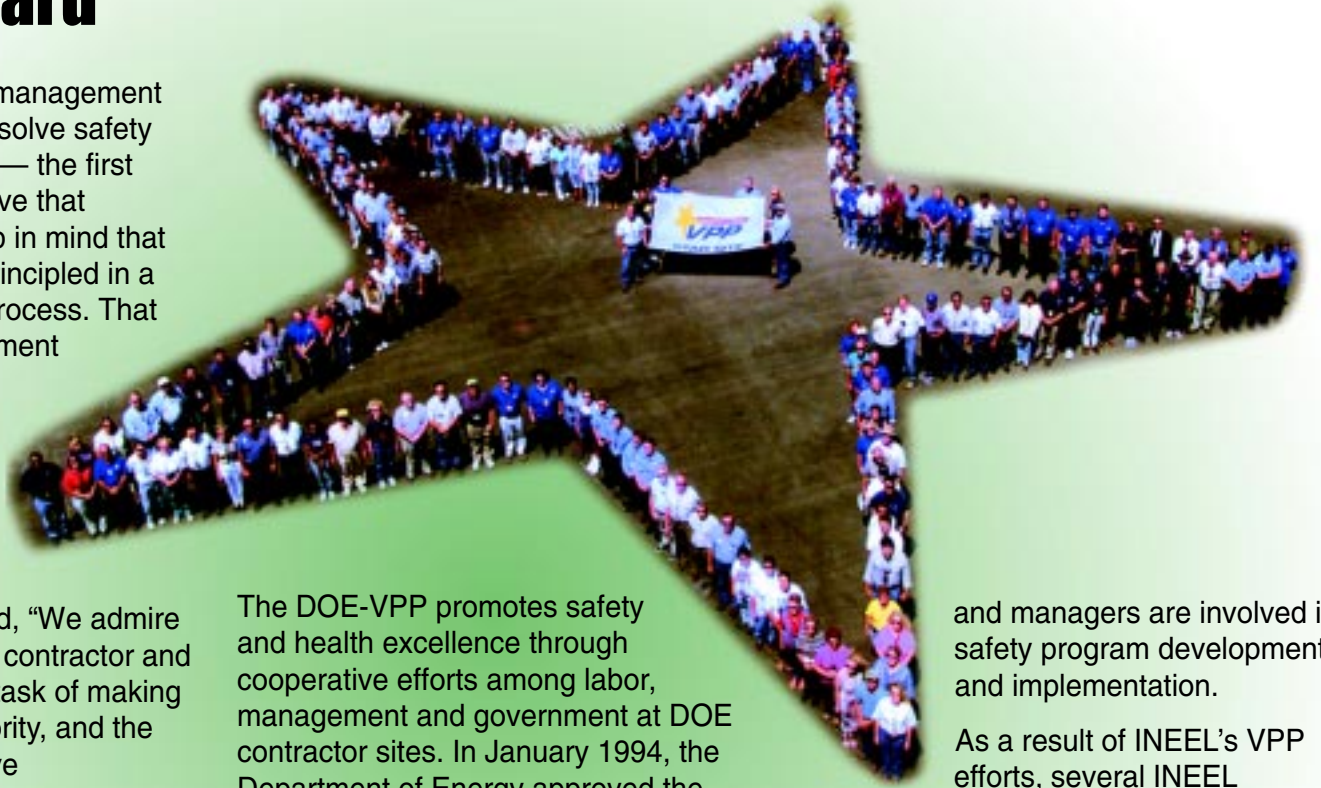
Gold Star status is the highest safety award that can be achieved by any workplace, whether it is in the DOE complex or in private industry. The INEEL represents one of the largest employee groups in the nation to earn VPP Gold Star status.

"This award represents the culmination of several years of effort by your employees and management," said DOE Under Secretary Robert Card. "Your achievement has gained INEEL formal induction into one of the most select groups in either DOE or the entire private sector regarding excellence in safety performance."

"In reaching this level of safety excellence," Card said, "INEEL has demonstrated extraordinary teaming

among unions, contractor management and DOE to identify and resolve safety issues. You are a Star site — the first national laboratory to receive that recognition. However, keep in mind that VPP works because it is principled in a continuous improvement process. That means you have a commitment to continuously improve upon what you have already accomplished."

DOE Idaho Operations Office Manager Beverly Cook said, "We admire the tenacity with which our contractor and its employees took on the task of making safety INEEL's highest priority, and the outstanding success they've demonstrated in earning Voluntary Protection Program Gold Star recognition. Intensive scrutiny this year by the Department of Energy's VPP evaluators confirmed that success. It is clear to me that INEEL employees are serious about safety in the workplace."



The DOE-VPP promotes safety and health excellence through cooperative efforts among labor, management and government at DOE contractor sites. In January 1994, the Department of Energy approved the initiation of the Voluntary Protection Program. The DOE VPP program is patterned after the U.S. Occupational Safety and Health Administration's VPP program. The cornerstone of the program is joint participation among management, labor and government in the creation of a safe workplace.

There are two levels of recognition in the DOE-VPP: Gold Star and Silver Star. Contractors whose programs meet the requirements for outstanding safety and health programs receive Gold recognition, the highest achievement level. Contractors with highly effective programs, who commit themselves to attain Star status within a five-year period, receive Silver Star recognition.

Attaining the Star designation was a several-year process for the INEEL. The first level in the process was programmatic review. The review assessed the completeness of the safety and health program infrastructure within the INEEL. The second step was employee and management surveys and interviews. The surveys were used to determine the degree to which employees

and managers are involved in safety program development and implementation.

As a result of INEEL's VPP efforts, several INEEL subcontractors are also working more safely than ever. Some are winning new customers because of their improved safety records.

"It has helped us keep our workers' compensation costs down," said Lamar Hayward of 3-D Fire Protection. "And by having virtually no workers' compensation claims, our competitiveness has gone up."

Hayward cited a contract with a Blackfoot company where 3-D was awarded the contract in part because of its outstanding safety record.

Greg Hill, vice president of Atlas Mechanical and president of the Eastern Idaho Contractors Association, agreed.

"The fact that we have a VPP program bodes well for us when we bid on contracts," Hill said. "We do a lot of work in industrial plants, and many of them are also VPP Star facilities. The one thing that impresses me is there has been a cultural change in the work force. Safety has become a personal thing."

(For more information, call Teri Ehresman at 208-526-7785.)



INEEL employees raise the Department of Energy VPP Star Site flag.

INEEL progresses toward interim dry storage of spent nuclear fuel

The Department of Energy's Idaho National Engineering and Environmental Laboratory is on a mission to place all the spent nuclear fuel it is storing into dry storage. Completing that mission within the next two decades is a requirement of the 1995 Idaho Settlement Agreement. It will also help protect the environment and save taxpayers and the INEEL money.

The INEEL currently has about 240 metric tons of spent nuclear fuel in dry storage; ultimately, there will be about 311 metric tons. Under terms of the 1995 Settlement Agreement, DOE agreed to move all spent fuel out of Idaho by 2035.

The most recent success was completing the Three Mile Island Unit 2 Dry Storage Project in April. The project was finished six weeks ahead of a Settlement Agreement deadline. The material had been stored under water at the INEEL since its arrival between 1985 and 1990.

The Site is now preparing spent nuclear fuel stored in the Materials Test Reactor canal so it can be moved into dry storage next year. Significant progress is also being made in preparations to move the remaining spent nuclear fuel out of the Test Area North pool into dry storage. The TAN pool is nearly 50 years old.

Foster Wheeler Environmental Corp., a private company awarded a contract in May 2000 to design, build and operate a dry storage facility at the INEEL, presented its 50 percent design in May 2001 to the DOE. The facility, to be built near the Idaho Nuclear Technology and Engineering Center, will begin operating after 2004 and will store spent nuclear fuel and prepare it for shipping to a federal repository when it becomes available.

The INEEL manages five dry storage facilities: four at the Site in Idaho plus the Fort St. Vrain Independent Spent Fuel Storage Installation in Colorado.

While water pools are still a primary means of safely storing spent fuel throughout the DOE complex, placing the INEEL's spent nuclear fuel in dry storage is mandated by the Idaho Settlement Agreement. So, the INEEL is meeting a legal commitment to the state and its citizens. Dry storage also puts the spent fuel one step closer to being made ready for shipment out of state by the 2035 deadline.

There are other advantages associated with dry storage.

Spent nuclear fuel dry storage removes the environmental concern that spent fuel storage pools could fail and leak water into the environment and possibly contaminate the Snake River Aquifer.

From a cost standpoint, dry storage removes some of the normal maintenance activities required with water storage, such as regular treatment of the water to maintain the proper temperature and remove minerals and trace contaminants. Water storage can cause corrosion of some fuel containers. Storage pools have to be continually monitored for leaks.

As the INEEL establishes new dry storage facilities and

operations, officials have gained from the experience, making technical improvements in facility design and handling operations.

The TMI-2 and Fort St. Vrain facilities are licensed by the Nuclear Regulatory Commission. (The INEEL is the only DOE operation managing NRC-licensed facilities.) The dry storage facility that Foster Wheeler builds will also be NRC-licensed. This, officials say, sets additional requirements and provides external oversight that should give the public added confidence in the safety of the operations.

(For more information, call John Walsh at 208-526-8646.)



INEEL workers carefully backed up the transport trailer and shipping cask containing Three Mile Island spent fuel and core debris so the material could be put into a horizontal storage module at the Independent Spent Fuel Storage Installation. The project, completed last April, is part of the on-going effort to place all INEEL spent nuclear fuel into dry storage over the next two decades.

JASON Project attracts students to science and technology

Science comes alive for thousands of Idaho students with their participation in the JASON program each year. And INEEL, one of America’s premier national laboratories, is helping make that happen.

JASON was founded in 1989 by Dr. Robert Ballard, who discovered the *RMS Titanic*.

The JASON Project is a unique partnership among private industry, scientific research facilities, government agencies, museums and education organizations with the goal of getting students excited about science and technology.

Each year, JASON mounts a major scientific expedition that examines one or more of the Earth’s physical systems. The host researchers and their work become the basis for developing a year-long interdisciplinary curriculum for students in grades four through nine.

JASON uses the latest telecommunications, satellite broadcasts and interactive Web links to allow schoolchildren to join Ballard “real-time” on real research projects and take part in substantive exchanges with researchers as they work.

With funding provided by the U.S. Navy through the Office of Naval Research and with the support of Bechtel corporate and the U.S. Department of Energy’s Idaho Operations Office, INEEL has supported the JASON Project’s interactive science program for Idaho’s school children for several years.

“Science depends for its future on the excellence of the science education today’s students receive,” says Elda Zounar of the INEEL’s Pre-college Education group. “The JASON Project is one of the best things to happen to science education in a long time.”

INEEL’s role has been to inform Idaho’s educators of the availability of JASON, to encourage and facilitate participation in JASON across the state, and to help secure the locations, equipment and other support necessary for JASON to succeed.



Wearing Hawaiian attire to fit in with the theme, students from Rocky Mountain Middle School participate in a JASON live laboratory.

John Pedersen, a science teacher at South Middle School in Nampa, wholeheartedly agrees.

“Integrating JASON Project into our curriculum is one of the best things that we could do for our students as well as our team,” Pedersen says. “All subject areas are covered in the JASON curriculum, from science to math to language arts.”

In Caldwell, RaNae Rensvold teaches sixth grade. “The JASON Project is a great way to get children excited about science and the world around them,” she says. “Dr. Ballard creates a new adventure every year that only leaves my students wanting to know more.”

In Idaho Falls, Scott Smith teaches at Eagle Rock Junior High. Smith has high praise for the JASON Project and its impact in his classroom.

“Each year’s information is current material rather than old textbooks, and the teacher has as much fun learning about these new and exotic places as the student,” he says.

Ballard will visit Idaho Falls Oct. 3, in conjunction with the Idaho Science Teachers Association annual conference, giving the public and educators an opportunity to hear him in person. He will do the same in Boise Oct. 4.

(For more information, call Jeff Benson at 208-526-3841.)

Regional universities working on INEEL-related research

Six subsurface science proposals have been selected for funding as part of a joint collaborative research program between regional universities and the Department of Energy’s Idaho National Engineering and Environmental Laboratory.

The six new grants are in addition to 13 grants awarded last year. The grants are designed to organize collaborative research projects at Inland Northwest Research Alliance universities and the INEEL into a cohesive program that achieves national and international recognition in subsurface science, according to Gautam Pillay, INRA’s executive director.

Seven universities formed INRA in the spring of 1999. The member universities include Boise State, Idaho State, University of Idaho, Montana State, University of Montana, Utah State and Washington State. The INEEL is operated for the DOE by Bechtel BWXT Idaho, LLC jointly with INRA.

“These proposals have the potential to develop into new, significant collaborative research opportunities at INRA institutions and INEEL,” Pillay said. Work on the projects begins Oct. 1.

Funding for the 19 projects total over \$4.3 million over three years and fund doctoral and postdoctoral researchers who will work on collaborative projects. That total includes over \$1 million that the INRA



member institutions will contribute toward the projects. The researchers will spend time on their projects at the INEEL and INRA campuses.

In another INRA-related effort, regional leaders helped celebrate a milestone on Aug. 29, when the Center for Science and Technology in Idaho Falls was officially launched.

The launch celebrated the “partners in progress” and site preparation that will spawn a world-class research and graduate center in the subsurface and energy science disciplines.

Groundwork is anticipated late this fall with construction contracts expected to be secured by spring 2002. Building completion is targeted for 2003. Estimated cost is \$11 million to provide state-of-the-art labs and learning space that initially will house more than 100 professionals and graduate students.

(For more information, call Teri Ehresman at 208-526-7785.)

SHIPP

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Doing science successfully

If anything excites Shipp, it is the opportunity to do science successfully. He proved that as an associate laboratory director at Pacific Northwest National Laboratory in Washington state, where he oversaw a \$250 million annual science and technology budget and was recognized for repeatedly bringing innovative technical solutions into practical use – and into the marketplace.

“In environmental management, long-term stewardship is very important. Understanding how contaminants migrate through the subsurface over long periods is the basis for our subsurface science initiative at the INEEL,” Shipp says.

“With the Subsurface Geosciences Laboratory, we’ll be able to address some of the critical uncertainties in our knowledge of contaminant movement. The SGL enables us to increase our science base and allows us to address a principal problem of our client, environmental management.”

Now in the design stages, the SGL is intended to broaden mankind’s basic understanding of processes at work in the Earth’s subsurface.

These include water movement, biological activity, biogeochemical interactions and how manmade contaminants affect, or are affected by, each. It is the major scientific thrust of the INEEL’s future, and a key to solving water and soil pollution problems for the nation and the world.

Generation IV

A second major INEEL responsibility to the nation is nuclear energy, where INEEL shares lead laboratory status with Argonne National Laboratory. “We’re proud to support DOE in this way,” Shipp says. “The INEEL has been

America’s principal laboratory in the development of commercial nuclear power. We will continue to make important contributions to the nation’s energy security.”

The recent energy crisis in the West has heightened awareness of the good that nuclear power can do, he notes.

“Approximately 20 percent of America’s electricity comes from nuclear power,” Shipp says. “Nuclear energy is crucial to a secure, balanced energy supply for the future. Current reactors are efficient and safe, but the technical knowledge we now have will allow us to provide even better ones.”

The Department of Energy’s Generation IV initiative will do just that. The name signifies that the

next major breakthroughs in nuclear power will be the fourth “generation” (in terms of major design improvements) since nuclear power was first used to generate electricity – an event which also took place at the INEEL, back in 1951.

“The Generation IV initiative is of great importance to the INEEL,” Shipp says. “The Generation IV goal is to develop the world’s most advanced, safest and most proliferation-resistant reactor. We want to meet the nation’s energy needs in an environmentally responsible way.”

Shipp is quick to share his management philosophy, too. “My management philosophy reflects the concept that all work is a process that can be planned, performed, assessed and improved,” he says. “To do that, we will place emphasis on work results and improving the quality of the products and services provided by the INEEL.

“As a national laboratory, our relevance is found in successfully working on the most important projects our customer has,” Shipp emphasizes. “That’s what we’re doing at the INEEL. We’re putting science to work.”

(For more information, call John Howze at 208-526-6864.)

Want to Know More?



Beyond the science and service highlighted in this publication, there’s much more information available about the INEEL. Fact sheets, reports, tours, overviews and more are just a phone call or mouse click away.


- 1-800-708-2680
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Design firm chosen for new Subsurface Geosciences Laboratory at INEEL

INEEL has hired the Zimmer-Gunsul-Frasca (ZGF) Partnership to prepare a conceptual design for an approximately 200,000-square-foot Subsurface Geosciences Laboratory (SGL) in Idaho Falls.

The SGL will include a unique array of equipment and capabilities—giving researchers new tools to better understand how contaminants interact with their surroundings, change over time, and move through soil and groundwater.

The defining characteristic of the SGL is a focus on mesoscale research—experiments significantly larger than those now performed in traditional laboratories—designed to mimic complex, real-world processes. Researchers are developing experimental plans for above

ground tanks as large as 20 feet to 60 feet on a side and 10 feet to 30 feet deep.

Through mesoscale research, scientists can take what they have already learned from small-scale bench work and test ideas in controlled, nearly field-scale environments—fleshing out what we already know about contaminant behavior in the subsurface. Such larger-scale research will enable scientists to better capture the incredibly broad range of information needed to make predictive models more accurate. They will be able to develop more effective approaches to



environmental remediation, and novel instrumentation for monitoring the long-term effects of such remediation techniques.

The size of the equipment needed for mesoscale research makes facility design more complicated than traditional laboratory spaces.

Scientists need massive tanks and equipment to conduct the research, and high-bay spaces and a bridge crane to handle the bulk rock, sand and soil before and after the experiments. Unique equipment, such as a geocentrifuge, requires laboratory space that shields

other equipment from vibrations and electromagnetic interference.

The conceptual design of the SGL is the first step in the process that will result in a new facility by 2007.

“This may seem like a long and arduous process, but the end result—a new national user facility at INEEL with unique equipment and experimental capabilities—will be worth the effort,” said Ray Stults, INEEL associate laboratory director. “We will have new capabilities to solve complex environmental problems, attract visiting scientists from around the world to collaborate with staff at INEEL and make INEEL an international center for subsurface science research.”

(For more information, call Deborah Hill at 208-526-4723.)

New jobs and new ‘Partners in Progress’

The first year of Bechtel BWXT Idaho’s (BBWI’s) contract to manage and operate the Idaho National Engineering and Environmental Laboratory resulted in the creation of 830 new jobs in Idaho, each created from a corporate-funded account of \$1.4 million not associated with the company’s Department of Energy contract to manage and operate the INEEL.

While the jobs created in the second year will likely surpass last year’s numbers, a second chapter has been opened. A concerted effort will combine not only the financial resources of the INEEL, but also the experience and expertise of other entities such as the Idaho Department of Commerce and city and county economic organizations statewide. The result will be a unified agenda designed to strengthen Idaho’s economy from border to border.

“In the first year, we were able to make a lot of grants to a lot of people while establishing meaningful relationships with the Idaho Department of Commerce and the Idaho Small Business Development Center (ISBDC),” said Chris Hertz, INEEL economic development director. “The success we’re experiencing now is because we’ve built a solid foundation on which to work for the future. We still have \$1.4 million to put to use, but now that our team has expanded, we hope to reach an even larger area and have an even greater impact. It’s a work in progress.”

While the INEEL continues to work toward its goal of creating 3,000 new jobs by Oct. 1, 2004, the agenda for improving Idaho’s economy is beginning to take shape.

One of the areas of emphasis is rural Idaho. Grants to Tele-Servicing Innovations (TSI) have enabled TSI to open a customer contact center in Jerome and later this fall in Smelterville near Kellogg. TSI plans to expand centers previously opened in Salmon and Burley. It will soon hire its five-hundredth employee since beginning business in Idaho Falls six years ago. Efforts to revitalize rural Idaho work hand-in-hand with Gov. Dirk Kempthorne’s Rural Idaho Initiative, a program to help create jobs in outlying areas of the state.

A working agreement with the ISBDC provides entrepreneurial training to assist people who have lost their jobs or need training to improve their career paths.

“We’re pleased to find a partner like the INEEL,” said Betty Capps, ISBDC director. “None of us (economic development organizations) have enough resources on our own to do what we’d like to do. It’s a win-win situation.”

Economic Development funding has also assisted in the creation of two spin-off companies from the INEEL. Idaho Falls businesses Vartech and NitroCision have opened their doors in the past year with the help of economic development money and small business assistance from the INEEL.

Hertz and his staff have been working with other interested parties to assist in the creation of the southeast Idaho technology corridor, a geographical area from Pocatello to Ashton designed to organize technology infrastructure elements in a way that would both attract



Tele-Servicing Innovations (TSI) customer contact centers employ people from several Idaho communities, including Idaho Falls, Salmon, Burley, Jerome and soon, in Smelterville.

and support technology-based companies.

“It’s in the best interest of communities throughout southeast Idaho to combine resources in an effort to attract businesses to the area,” said Tim Solomon, Regional Development Alliance, Inc. (RDA) executive director, who is working with the INEEL and others in developing the corridor. “Separately and individually, southeast Idaho cities and towns may not be enticing to outside business, but collectively and as a whole, we have a lot to offer.”

Perhaps most significant is that economic development organizations statewide are pulling together to create the first Idaho Economic Development Association (IEDA). The group will have its first

annual meeting in late October to discuss strategies to develop sustainable solutions to development problems in Idaho communities.

“BBWI’s economic development program is giving assistance to agencies that span from Franklin County in southeast Idaho to Clearwater County in the north,” Hertz said. “Add to that, the university collaboration, the state Department of Commerce and the newly created IEDA, and we’re seeing for the first time, a united effort to help Idaho economically move into the 21st century. Working together, we are indeed ‘partners in progress.’”

(For more information, call Steve Zollinger at 208-526-9590.)

CLEANUP TECHNOLOGY

Continued from page 1

Having successfully operated at the Test Area North, the technology was then deployed at the Power Burst Facility to characterize a potentially highly contaminated room—one that might affect workers during future demolition operations. The information obtained from this survey will be used to plan worker safety, reduce operational costs, shorten project schedules and improve environmental protection.

“In my mind, the best thing about this technology is worker safety,” says Neal Yancey, INEEL’s principal test engineer for the demonstration. “This new technology involves less than half the number of workers, reduces worker exposure to almost zero, and only takes one-fifth the time to complete a survey. It’s good news for everybody.”

Data collected throughout the demonstration will be used by the U.S. Army Corps of Engineers to compare the cost-effectiveness of the Russian

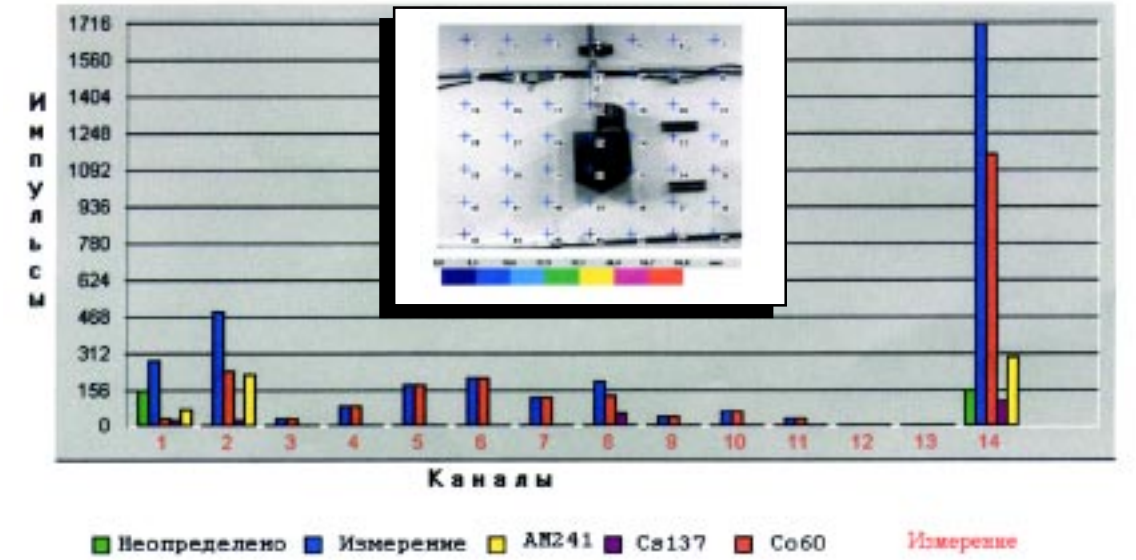
systems to the conventional technologies already in use at the INEEL. This independent analysis will show the cost benefits made possible using this technology. The Corps’ analysis will be shared with others across the DOE complex and at commercial sites facing similar environmental dilemmas.

According to Paul Kearns, INEEL vice president and deputy laboratory director, “We’re building partnerships with the Russians and others who possess diverse science and technical experience—to pool resources, save on technology development costs, draw on combined strengths and leverage each other’s unique capabilities. Ultimately, our aim is to fully use the INEEL’s operational experience and research and development capabilities to resolve, not only our own, but national and international environmental challenges as well.”

DOE’s Environmental Management International Program sponsored the Russian technology demonstration through a Large Scale Demonstration and

Deployment Project funded and managed by the National Energy Technology Laboratory.

(For more information, call Reuel Smith at 208-526-3733.)



The above insert is a display in Russian from a Gamma Locating Device scan of a potentially contaminated area. Each crosshair represents a separate measurement taken by the GLD. The color of the crosshair identifies the level of radiation present at each point. The colors range from no radiation (dark blue) to intense radiation (red).

The graph shows energy levels measured at each crosshair. The energy levels identify to the scientists what radioactive isotope is being detected. A computer program calculates the data measured by the GLD and puts it in graph form.